

II. Claims

This version and listing of the claims replaces all prior versions and listings of the claims.

1-15. (canceled)

16. (original) A method of manufacturing an insulation product comprising the steps of:

forming a web of randomly oriented fibers on a forming belt, said fibers being coated with a heat curable binder, said web generally having a first major surface and a second major surface and a pair of side portions,

wherein said web has a higher percentage by weight of said heat curable binder in a region of said web proximate to at least one of said major surfaces compared with a total percentage by weight of said binder in said web,

compressing and heating said web to form a sheet of said randomly oriented fibers bonded by said heat curable binder, said sheet having first and second major surfaces and a pair of side portions; and

affixing a facing layer to said at least one of said major surfaces of said sheet,

wherein a region of said sheet proximate to said facing layer is more puncture resistant than a remainder of said sheet.

17. (original) The method of claim 16, wherein said sheet is a rigid or semi-rigid insulation board.

18. (original) The method of claim 17, wherein said board is a fiberglass board having a fiber density greater than about 2.0 pounds per cubic foot.

19. (original) The method of claim 16, wherein said facing layer is selected from the group consisting of a polymeric, foil, paper, or FSK or PSK laminate layer.

20. (original) The method of claim 16, wherein said sheet includes at least about 16 percentage by weight binder and said region of said sheet proximate to said facing layer is between about 25-33 percent of the thickness of said sheet.

21. (original) The method of claim 20, further comprising the step of providing a toughness improvement additive to said web, wherein said region of said sheet proximate to said facing layer includes said toughness improvement additive.

22. (original) The method of claim 21, wherein said additive includes a latex additive.

23. (original) The method of claim 21, wherein said additive improves the toughness of said region by at least 10%.

24. (original) The method of claim 21, wherein said additive improves the tensile strength of said region.

25. (original) The method of claim 21, wherein said additive comprises thermoplastic fibers that are meltbonded to said randomly oriented fibers at least in said region.

26. (original) The method of claim 20, wherein said sheet includes between about 16-25 percentage by weight binder.

27. (original) The method of claim 16, further comprising the step of providing a toughness improvement additive to said web, wherein said region of said sheet proximate to said facing layer includes said toughness improvement additive.

28-35. (canceled)

36. (new) A method of manufacturing an insulation board product comprising the steps of:

forming a web of randomly oriented glass fibers on a forming belt, said fibers being coated with a heat curable binder, said web generally having a first major surface and a second major surface and a pair of side portions,

wherein said web has a higher percentage by weight of said heat curable binder in a region of said web proximate the first major surface compared with a total percentage by weight of said binder in said web,

compressing and heating said web to form a rigid or semi-rigid fiber glass board, said board having first and second major surfaces corresponding to the first and second major surfaces of the web and a pair of side portions; and

affixing a facing layer to the first major surface,

wherein a region of said board proximate to the facing layer is more puncture resistant than a remainder of said board.

37. (new) The method of claim 36, wherein said board has a fiber density greater than about 2.0 pounds per cubic foot.

38. (new) The method of claim 37, further comprising the step of providing a toughness improvement additive to said web, wherein said region of said board proximate to said facing layer includes said toughness improvement additive.

39. (new) The method of claim 37, wherein said board includes at least about 16 percentage by weight binder and said region of said board proximate to said facing layer is between about 25-33 percent of the thickness of said board.

40. (new) The method of claim 36, further comprising the step of providing a toughness improvement additive to said web, wherein said region of said board proximate to said facing layer includes said toughness improvement additive.

41. (new) The method of claim 40, wherein said additive includes latex.
42. (new) The method of claim 40, wherein said additive improves the toughness of said region by at least 10%.
43. (new) The method of claim 40, wherein said additive improves the tensile strength of said region.
44. (new) The method of claim 40, wherein said additive comprises thermoplastic fibers that are melibonded to said randomly oriented glass fibers at least in said region.
45. (new) A method of manufacturing an insulation board product comprising the steps of:
- forming a web of randomly oriented glass fibers on a forming belt, said fibers being coated with a heat curable binder, said web generally having a first major surface and a second major surface and a pair of side portions,
- wherein said web has a higher percentage by weight of said heat curable binder in a region of said web proximate the first major surface compared with a total percentage by weight of said binder in said web,
- compressing and heating said web to form a rigid or semi-rigid fiber glass board, said board having first and second major surfaces corresponding to the first and second major surfaces of the web and a pair of side portions; and
- affixing a facing layer to the first major surface,
- wherein a region of said board proximate to the facing layer is more durable than a remainder of said board.